voltage capable of saturating the transmission factor or an OFF voltage capable of bringing the electrooptic material into a non-transmissive state, thereby to implement a subfield drive in which a gradation is expressed in accordance with states of a light transmissive state and the non-transmissive state of the electrooptic material in a unit time, and a time ratio of the states, the drive circuit comprising:

a drive device that sets as control units a plurality of subfields into which a field period is divided on a time base, sets a time period of each of the subfields to be shorter than a saturation response time which is required for saturating the transmission factor of the electrooptic material in the case of applying the ON voltage, and determines, on the basis of display data, the subfields for which to apply the ON voltage and the subfields for which to apply the OFF voltage, thereby to express the gradation.

2. (Amended) A drive circuit of an electrooptic device according to Claim 1, the saturation response time of the electrooptic material being shorter than a field period of the display data.

3. (Amended) A drive circuit of an electrooptic device that supplies a display portion wherein pixels are constructed in a matrix shape out of an electrooptic material having a transmission factor for light that is variable by application of a voltage, with an ON voltage capable of saturating the transmission factor or an OFF voltage capable of bringing the electrooptic material into a non-transmissive state, thereby to implement a subfield drive in which a gradation is expressed in accordance with states of a light transmissive state and the non-transmissive state of the electrooptic material in a unit time, and a time ratio of the states, the drive circuit comprising:

a drive device that sets as control units a plurality of subfields into which a field period is divided on a time base, sets a time period of each of the subfields to be shorter than a non-transmission response time which is required for shifting the transmission factor

of the electrooptic material from a saturated state into the non-transmissive state in the case of applying the OFF voltage, and that determines, on the basis of display data, the subfields for which to apply the ON voltage and the subfields for which to apply the OFF voltage, thereby to express the gradation.

4. (Amended) A drive circuit of an electrooptic device according to Claim 3, the non-transmission response time of the electrooptic material being shorter than a field period of the display data.

5. (Amended) A drive circuit of an electrooptic device according to Claim 1, the drive device applying the ON voltage to the electrooptic material in successive or non-successive subfields so that an integral value of a transmissive state of the electrooptic material in a pertinent field period corresponds to the display data.

6. (Amended) A drive circuit of an electrooptic device according to Claim 1, the plurality of subfields within each field being set at substantially the same time width.

7. (Amended) A drive circuit of an electrooptic device according to Claim 1, the saturation response time being a time period which is not shorter than three subfield periods.

8. (Amended) A drive circuit of an electrooptic device according to Claim 1, the non-transmission response time being a time period which is not shorter than three subfield periods.

9. (Amended) A drive circuit of an electrooptic device according to Claim 1, the ON voltage being applied to the electrooptic material in a concentrated fashion in subfield periods on a lead side of the field period.

10. (Amended) A drive circuit of an electrooptic device according to Claim 3, the OFF voltage being applied to the electrooptic material in a concentrated fashion in subfield periods on a end side of the field period.

11. (Amended) A drive method of an electrooptic device that supplies a display portion wherein pixels are constructed in a matrix shape out of an electrooptic material having a transmission factor for light that is variable by application of a voltage, with an ON voltage of, at least, a saturation voltage capable of saturating the transmission factor or an OFF voltage capable of bringing the electrooptic material into a non-transmissive state, thereby to implement a subfield drive in which a gradation is expressed in accordance with states of a light transmissive state and the non-transmissive state of the electrooptic material in a unit time, and a time ratio of the states, the method comprising:

setting as control units a plurality of subfields into which a field period is divided on a time base;

setting a time period of each of the subfields to be shorter than a saturation response time which is required for saturating the transmission factor of the electrooptic material in the case of applying the ON voltage; and

determining on the basis of display data the subfields for which to apply the ON voltage and the subfields for which to apply the OFF voltage therein, thereby to express the gradation.

12. (Amended) A drive method of an electrooptic device that supplies a display portion wherein pixels are constructed in a matrix shape out of an electrooptic material having a transmission factor for light that is variable by application of a voltage, with an ON voltage of, at least, a saturation voltage capable of saturating the transmission factor or an OFF voltage capable of bringing the electrooptic material into a non-transmissive state, thereby to implement a subfield drive in which a gradation is expressed in accordance with states of a light transmissive state and the non-transmissive state of the electrooptic material in a unit time, and a time ratio of the states, the method comprising:

setting as control units a plurality of subfields into which a field period is divided on a time base;

setting a time period of each of the subfields to be shorter than a non-transmission response time which is required for shifting the transmission factor of the electrooptic material from a saturated state into the non-transmissive state in the case of applying the OFF voltage; and

determining on the basis of display data the subfields for which to apply the ON voltage and the subfields for which to apply the OFF voltage, thereby to express the gradation.

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13. (Amended) A drive method of an electrooptic device according to Claim 11, the gradation being expressed by applying the ON voltage to the electrooptic material in successive or non-successive subfields so that an integral value of the transmissive state of the electrooptic material in the pertinent field period corresponds to the display data.

14. (Amended) A drive method of an electrooptic device that divides each field into a plurality of subfields on a time base, and controls and drives a plurality of pixels which include an electrooptic material enclosed in intersection areas between a plurality of data lines and a plurality of scanning lines, by an ON voltage or an OFF voltage every subfield in accordance with display data, whereby the respective pixels display gradations within one field, the method comprising:

setting a time period of each of the subfields to be shorter than a saturation response time which is required for saturating the transmission factor of the electrooptic material in the case of applying the ON voltage; and

determining, on the basis of the display data, the subfields for which to apply the ON voltage and the subfields for which to apply the OFF voltage.

15. (Amended) An electrooptic device comprising the drive circuit of an electrooptic device according to Claim 1.

16. (Amended) An electrooptic device comprising:

pixels which include pixel electrodes disposed in correspondence with intersections between a plurality of scanning lines and a plurality of data lines, switching elements for controlling voltages to be applied to the respective pixel electrodes, an electrooptic material disposed in intersection areas between the plurality of data lines and the plurality of scanning lines, and a counter electrode arranged in opposition to the pixel electrodes, and

a drive device that supplies an ON voltage of, at least, a saturation voltage capable of saturating a transmission factor of the electrooptic material or an OFF voltage capable of bringing the electrooptic material into a non-transmissive state, thereby to implement a subfield drive in which a gradation is displayed in accordance with states of a light transmissive state and the non-transmissive state of the electrooptic material in a unit time, and a time ratio of the states, wherein the drive device:

sets as control units a plurality of subfields into which a field period is divided on a time base,

sets a time period of each of the subfields to be shorter than a saturation response time which is required for saturating the transmission factor of the electrooptic material in the case of applying the ON voltage, and

determines, on the basis of display data, the subfields for which to apply the ON voltage and the subfields for which to apply the OFF voltage, thereby to express the gradation.

17. (Amended) An electronic equipment comprising an electrooptic device according to Claim 15.

18. (Amended) A drive method of an electrooptic device that divides each field into a plurality of subfields on a time base, and drives a plurality of pixels which include an electrooptic material enclosed in intersection areas between a plurality of data lines and a plurality of scanning lines, by an ON voltage or an OFF voltage in each of the subfields in accordance with gradation data, whereby the respective pixels are brought into transmissive states or non-transmissive states so as to display gradations within one field by a subfield drive scheme, the method comprising:

performing control so that pulse signals for bringing the respective pixels into the transmissive states may be concentrated in a first half of a pertinent field.

19. (Amended) A drive method of an electrooptic device according to Claim 18, in a case where display content changes at changeover of fields in displaying a dynamic picture image, the pulse width of the pulse signals for bringing the pixels into the transmissive states in a later field being altered in accordance with a direction in which a brightness of a screen changes.

20. (Amended) A drive method of an electrooptic device according to Claim 18, pulse signals for bringing the respective pixels into the non-transmissive states being outputted in, at least, a last of the subfields of a pertinent field.

21. (Amended) A drive method of an electrooptic device according to Claim 18, the pulse width of the pulse signals for bringing the pixels into the transmissive states being altered in each field in accordance with at least one of a temperature of the electrooptic material and an ambient temperature of the electrooptic material.

22. (Amended) A drive circuit of an electrooptic device having pixels which include:

pixel electrodes disposed in correspondence with intersections between a plurality of scanning lines and a plurality of data lines;

switching elements that control voltages to be applied to the respective pixel electrodes;

an electrooptic material disposed in intersection areas between the plurality of data lines and the plurality of scanning lines;

a counter electrode arranged in opposition to the pixel electrodes;

the drive circuit dividing each field into a plurality of subfields on a time base, and driving the pixels by an ON voltage or an OFF voltage in each of the subfields in accordance with gradation data, whereby the respective pixels are brought into transmissive states or non-transmissive states so as to display gradations within one field by a subfield drive scheme, the drive circuit comprising:

a control device that performs control so that pulse signals for bringing the respective pixels into the transmissive states may be concentrated in a first half of a pertinent field.

23. (Amended) A drive circuit of an electrooptic device according to Claim 22, in a case where display content changes at changeover of fields in displaying a dynamic picture image, the control device altering a pulse width of the pulse signals for bringing the pixels into the transmissive states in a later field in accordance with a direction in which a brightness of a screen changes.

24. (Amended) A drive circuit of an electrooptic device according to Claim 22, the control device outputting pulse signals for bringing the respective pixels into the non-transmissive states, in, at least, a last of the subfields of the pertinent field.

25. (Amended) A drive circuit of an electrooptic device according to Claim 22, further comprising:

a temperature detection device that detects at least one of a temperature of the electrooptic material itself and an ambient temperature of the electrooptic material; and

a pulse width correction device that makes corrections so that a pulse width of the pulse signals for bringing the pixels into the transmissive states as is predetermined in correspondence with each gradation may be altered on the basis of a detection output of the temperature detection device in each field.

26. (Amended) An electrooptic device, comprising:

pixels which include pixel electrodes disposed in correspondence with intersections between a plurality of scanning lines and a plurality of data lines, switching elements that control voltages to be applied to the respective pixel electrodes, an electrooptic material disposed in intersection areas between the plurality of data lines and the plurality of scanning lines, and a counter electrode arranged in opposition to the pixel electrodes;

a scanning line drive circuit that supplies scanning signals for dividing each field into a plurality of subfields on a time base, and that renders the switching elements conductive in each of the plurality of subfields, to the scanning lines;

a data line drive circuit which supplies binary signals for designating at least one of an ON voltage and an OFF voltage of the pixels and thus bringing the pixels into transmissive states or non-transmissive states on the basis of gradation data in each of the subfields, to the data lines corresponding to the pertinent pixels, the binary signals being supplied in time periods in which the scanning signals are respectively supplied to the scanning lines corresponding to a pertinent pixels; and

a control device that controls the data line drive circuit so that pulse signals for bringing the respective pixels into the transmissive states may be concentrated in a first half of each field.

27. (Amended) An electrooptic device according to Claim 26, in a case where display content changes at changeover of fields in displaying a dynamic picture image, the control device altering a pulse width of the pulse signals for bringing the pixels into the

transmissive states in a later field in accordance with the direction in which a brightness of a screen changes.

28. (Amended) An electrooptic device according to Claim 26, the control device outputting pulse signals for bringing the respective pixels into the non-transmissive states, in, at least, a last of the subfields of the pertinent field.

29. (Amended) An electrooptic device according to Claim 26, further comprising:

a temperature detection device that detects at least one of a temperature of the electrooptic material and an ambient temperature of the electrooptic material; and

a pulse width correction device that makes corrections so that a pulse width of the pulse signals for bringing the pixels into the transmissive states as is predetermined in correspondence with each gradation may be altered on the basis of a detection output of the temperature detection device in each field.

30. (Amended) An electronic equipment comprising an electrooptic device according to Claim 26.

31. (Amended) A drive method of an electrooptic device that divides each field into a plurality of subfields on a time base, and controls and drives the subfields for bringing into a transmissive state each of a plurality of pixels which include an electrooptic material disposed in intersection areas between a plurality of data lines and a plurality of scanning lines, by an ON voltage or an OFF voltage in accordance with display data, whereby the respective pixels display gradations within one field by a subfield drive scheme, the drive method comprising:

bringing at least one of the subfields in which a pertinent pixel is to be brought into the transmissive state and which are successively arranged in the first half of the

pertinent field on the basis of the display data, into a non-transmitting condition in conformity with rules stipulated by display data.

32. (Amended) A drive method of an electrooptic device according to Claim 31, among the subfields in which the pertinent pixel is to be brought into the transmissive state and which are successively arranged in a first half of the pertinent field on the basis of the display data, at least one subfield other than the subfield where the transmissive state starts, but which lies in the vicinity thereof being brought into the non-transmitting condition in conformity with the rules stipulated by the display data.

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33. (Amended) A drive method of an electrooptic device according to Claim 31, among the subfields in which the pertinent pixel is to be brought into the transmissive state and which are successively arranged in the first half of the pertinent field on the basis of the display data, at least one subfield other than the subfield where the transmissive state ends but which lies in the vicinity thereof being brought into the non-transmitting condition in conformity with the rules stipulated by the display data.

34. (Amended) A drive circuit of an electrooptic device having pixels that include pixel electrodes disposed in correspondence with intersections between a plurality of scanning lines and a plurality of data lines, switching elements that control voltages to be applied to the respective pixel electrodes, an electrooptic material enclosed in intersection areas between the plurality of data lines and the plurality of scanning lines, and a counter electrode arranged in opposition to the pixel electrodes;

the drive circuit controlling the subfields for bringing each of the pixels into a transmissive state, by an ON voltage or an OFF voltage, whereby the respective pixels display gradations within one field by a subfield drive scheme;

the drive circuit comprising:

a control device that performs control so that at least one of the subfields in which a pertinent pixel is to be brought into the transmissive state and which are successively arranged may be brought into a non-transmitting condition.

35. (Amended) An electrooptic device, comprising:

pixels which include pixel electrodes disposed in correspondence with intersections between a plurality of scanning lines and a plurality of data lines, switching elements for controlling voltages to be applied to the respective pixel electrodes, an electrooptic material disposed in intersection areas between the plurality of data lines and the plurality of scanning lines, and a counter electrode arranged in opposition to the pixel electrodes;

a scanning line drive circuit which supplies scanning signals for dividing each field into a plurality of subfields on a time base, and that renders the switching elements conductive in each of the plurality of subfields, to the scanning lines; and

a control device that controls a data line drive circuit so that pulse signals for bringing the respective pixels into transmissive states may be concentrated in a first half of the field, and that at least one of the pulse signals which bring the pixels into the transmissive states and which are successively arranged may be brought into a non-transmitting condition in accordance with display data.

36. (Amended) An electronic equipment comprising the electrooptic device according to Claim 35.

REMARKS

Claims 1-36 are pending in this application. By this Preliminary Amendment, the title, Abstract, specification and claims 1-36 are amended. No new matter is added.

The attached Appendix includes marked-up copies of the substitute specification (37 C.F.R. §1.125(b)(2)) and claims (37 C.F.R. §1.121(c)(1)(ii)).